The Journal's Great Puzzle of the Photographs.

The Puzzle of the Children's Pictures.

IN the foregoing five photographs of children some are of boys and some of girls. The question is: How many are boys and how many are girls? The pictures constitute a variation from the usual order of puzzles and problems, and those of the Journal readers who are mothers will find the study of them a source of pleasurable interest. All competitors in the regular weekly prize puzzle contest may answer the question, and their answers will be credited to them in the final award.

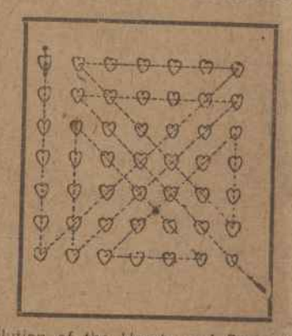
The photographs of the youngsters were chosen especially for use in this competition, and it is doubtful if a more interesting choice could have been made, as the results of the competition will show.

Not only mothers, but fathers and grandfathers, and old maiden aunts and little children themselves will find the pictures a source of great fun. A more amusing way for a family to pass an hour or two around the fireside cannot be imagined than in the solution of this unique puzzle of the photographs. As you study the pictures you say to yourself, "Why, that's easy! These are the boys and those are the girls!" Try it, and see.

Can You Tell the Boys From the Girls?

Answer to the Journal's Valentine Puzzle.

BY taking long shots, that is, by letting the arrow go outside of the blue field, it would be possible to transfix the forty-nine hearts and return to starting point in twelve flights of an arrow, but as a majority of our solvers did not assume that Cupid would play such erratic pranks, and no one discovered that method, the prize will be awarded to S. N. Ayres, of Netherwood, N. J., who gave the clever answer shown in the diagram: This course accomplished the feat in twelve shots, ending with the heart of his choice, as indicated by the arrow.



Solution of the Hearts and Darts Puzzle.

To return to the starting point would now require one more flight, but it is still one move shorter than any of the right-angled methods received, as the bias routes save one flight of the arrow.

A New Magic Square Puzzle.

Journal's Puzzle of the Capture of Aguinaldo.

By Sam Loyd.

THIS week's puzzle takes us to the Philippines, and shows General Otis starting from Manila on an expedition having for its purpose the capture of Aguinaldo. He will pass through the twenty-three chief towns of Luzon, the assumption being that the insurrection will have been so far suppressed as to offer no opposition to the line of march worthy of consideration in the problem.

No battles are to be fought or obstacles surmounted. It is to be a veritable walk-over from Manila to Bulacar.

You may go by any of the roads you wish, and must pass through every one of the towns shown on the map, it being understood, of course, that no town or road should be gone through more than once.

The solution to the puzzle may be described by giving a list of the towns in the regular order in which they are visited. Employ postal cards when convenient, and include answers to the other puzzles. Address to Sam Loyd, care of New York Journal. Ten dollars will be given for the best answer received within two weeks.

Taking occasion to have a little puzzle talk which in a general way will answer the thousand and one conundrums fired at me during the week, I will say that is impossible, as well as unfair to other competitors, to reply to personal letters regarding prize puzzles. No information should be given to one which is not imparted to all. The conditions of the puzzles are made as plain as possible, and if at times a puzzle appears vague, it is all the more to the credit of the clever fellow who solves it from the data given.

The most amusing letters are from those who think their answers almost, if not quite, as good as the winner's, and as they solved four out of the five puzzles they should have a share with the winner. They don't realize that there were ten thousand just a little bit better than theirs, but not quite up to the winner's. The winner, a bright little girl, solved all of the puzzles in such a short, clear, correct way, devoid of mathematical expressions, that both umpires picked it out as the best.

Magic Square Puzzle for the Little Ones.

ALL puzzlists are interested in the time-honored magic square, which, according to antiquarians, is so old that its very significance as an ancient symbol is lost. It is referred to in the old mathematical works as of Hindoo origin, and was supposed by the ancients to possess some mystical charm.

All of the great mathematicians have had a whack at it, and there are scores of rules for producing odd and even magic squares within magic squares that no one living is sufficiently recondite to understand. It is for the benefit of the little tots, therefore, that this elementary magic square is given, although it is safe to hazard a guess that some of the children of an older growth will slip a cog and get caught by this ever popular theme.

Dolly is showing how to divide 36 into the nine spaces so that it will add up 16 in the greatest possible number of directions. How did she do it?

How Will Gen. Otis Capture Aguinaldo, the Filipino Chief?

PASS THROUGH ALL OF THE TWENTY-THREE TOWNS IN THE ISLAND OF LUZON AND FINALLY LOCATE AGUINALDO AT BULACAR.

Answer to Who Sent the Valentine?

THE proposition as to what are the chances in favor of a valentine coming from Boonton or Trenton, when the cancellation mark merely shows the two letters ON, is a simple version of the principle of probabilities as discussed by the mathematical department of Oxford College. This version was given to teach a pretty lesson without going into the technicalities of higher mathematics.

The orthodox way is to count the possible combinations of adjacent letters. As there could be six double or connected letters in Boonton, ON would represent 2-6 of the possibilities. The letters occur twice in that name, whereas in Trenton, with six adjacent letters also, ON occurs but once. The chances, therefore, are 2-6 in favor of Boonton as against 1-6 in favor of Trenton, the predellections of the young lady in favor of her Trenton beau to the contrary notwithstanding.

Considerable difficulty might have been imparted to the problem by selecting a six-letter word like London in place of Boonton. We then find that ON represents 2-5 of the adjacent letter combinations, so the answer would be as 2-5 are to 1-6. That would be the same as 12-30 to 5-30, and as that would make 17 chances in all, the answer would be "12-17 in favor of London to 5-17 in favor of Trenton."

The second valentine puzzle introduces some very complex permutations, for it will be found that there are 720 possible arrangements of six valentines to be inclosed in six envelopes. If each valentine were destined for one of the six persons, but were inclosed hap-hazard, then in 267 positions no valentine would be in its correct envelope, whereas in the 453 other positions from one to six will be placed correctly. The answer, therefore, is that the chances are 267 to 453 that every one of the valentines went to the wrong person.

Answer to the Problem of the Farmer's Horses and Wagon.

IN this problem the farmer had purchased a wagon and three horses, but could only say that the "rig as it stood (that is, with one horse) cost twice as much as the other two horses, whereas, with the black horse to the wagon it would cost three times as much as the other two horses." The question was to determine the cost of the wagon and horses separately.

It would have simplified matters probably and eliminated all other answers by stating that the farmer had spent $180 in all, but the object being to get away from ordinary lines, it was best to give our puzzlists all the latitude they could wish. The result was that some could not get a basis upon which to build their calculations and failed to discover that any two number would produce some sort of answer.

With but one exception, however, all agreed upon $100 as the cost of the wagon, the horse hitched to the wagon $20, the black horse $35 and $25 for the other.